

AMENDMENT under 37 C.F.R. § 1.111
U.S. Appln. No. 09/750,386

REMARKS

Claims 1-27 are all the claims pending in the present application and all claims stand rejected. Reconsideration and allowance of all pending claims are respectfully requested in view of the following remarks.

OBJECTIONS.

Drawings

Figure 2 is objected to as containing informalities. By this amendment, in which a replacement sheet and annotated sheet is included, Applicant addresses the informalities noted by the Examiner. In view thereof, reconsideration of this objection is respectfully requested.

Specification

The Office Action further objects to the specification as including informalities which require correction. Reconsideration of this objection is respectfully requested as Applicant addresses the corrections requested by the Examiner in the foregoing amendments to the specification.

CLAIM REJECTIONS.

35 U.S.C. § 103(a)

Claims 1-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 3,655,917 to Levine in view of U.S. 6,697,098 to Wang and/or in further view of U.S. 6,577,674 to Ko et al. ("Ko"), or U.S. 6,622,009 to Tolson. Applicant respectfully traverses these rejections for the following reasons.

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It is well established that a *prima facie* obviousness is only established when three basic criteria are met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991) (MPEP 2144).

In the instant case, Applicant respectfully submits that (i) there is no motivation to the cited references; and (ii) even when combining the teachings of the cited references the resultant combination would not result in the invention claimed by Applicant.

APPLICANT'S INVENTION

The claimed invention is related to a portable communication device (e.g., 100; Fig. 1) including an intermediate frequency (IF) feedback architecture (e.g., 50, Fig. 2 or 350, Fig. 3) which combines IF baseband down conversion and a sampling and digitization systems together as a single integrated system. An advantage of Applicant's IF feedback architecture is that placing IF components (e.g., IF filters, multipliers, oscillators, etc.) after an integrator, allows noise shaping properties conventionally applied in the digitization and sampling system to also shape noise resulting from IF mixing. This may provide more flexibly and/or reduce costs in selecting and/or using various mixing components. (Specification pg. 12, ll. 12).

LEVINE

Levine discloses a transmission system for transmitting data at optimum speeds through non-optimum transmission media through a telephone network or high frequency radio channel. (Col. 1, ll. 6-9). The transmission system utilizes a plurality of subcarriers having different frequencies and a special time synchronizing pulse wave having the subcarrier frequencies at its principal frequency component. (Col. 1, ll. 59-63). Referring to Levine Fig. 3, an incoming signal is applied to a synchronizing pulse detector 20. Detector 20 detects the burst and switches

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on gates in feedback loops in order feed back to controllable phase shifting networks in each of the modulators signals corresponding to the respective phase differences between the reference signals and the respective subcarrier frequency components of the synchronizing pulse burst. This feedback arrangement brings the phase of each of the locally generated reference signals emerging from the phases modulators into phase equality with each of the corresponding subcarrier frequency components of the synchronizing pulse burst. (Col. 3, ll. 50-63).

WANG

In contrast to Levine, Wang discloses a receiver for processing high definition television (HDTV) signals. Wang discloses a network 14 including an IF processor 16 from which an oversampled digital symbol data stream is converted by an analog to digital converter (ADC) 19. The output oversampled digital data stream from ADC 19 is demodulated to baseband by an all digital demodulator/carrier recovery network 22. (Col. 2, ll. 37-46). Associated with ADC 19 and demodulator 22 is a segment sync and symbol clock recovery network 24. Network 24 detects and separates the repetitive data segment sync components of each data frame from the random data. (Col. 2, ll. 59-62).

The Office Action alleges Levine discloses the limitations of Applicant's claims with the exception of "an analog-to-digital converter (ADC) coupled to the signal generator." The Office Action relies on Wang to make up for this deficiency alleging "it would have been obvious to one of ordinary skill in the artthat it is possible to implement the ADC to provide the digital output of the IF signal as described in Wang coupled to the signal generator further providing the feedback signal as described in Levine, thus satisfying the limitations of the claim." (4/8/04 Office Action pg. 4; emphasis added). Applicant respectfully disagrees and submits *prima facie* obviousness has not been established since (i) there is no proper motivation for combining the cited references; and (ii) even when combining the cited references the resultant combination fails to teach or suggest each limitation of Applicant's claims.

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(I) THERE IS NO PROPER MOTIVATION FOR COMBINING THE CITED REFERENCES.

First, Applicant respectfully notes that neither the prior art references nor the Office Action provide any reasoning or motivation why the skilled artisan would modify Levine as suggested by the Examiner. Applicant respectfully reminds the Examiner that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990).

Levine discloses analog processing of frequency division multiplexed (FDM) signals having multiple subcarriers. The alleged "feedback signal" (Mk), which is in actuality a modulator, is used for separately modulating each of the subcarriers (col. 2, ll. 36-37) based on the clock pulses from generator 14. Synchronized pulse bursts are introduced into the FDM signal where the amplitude of the synchronized burst is made distinctly larger than that of the data carrying signal so the burst may be separately detected and used by pulse wave detector 20 for synchronized demodulation of the subcarriers. There is no feedback signal compared and subtracted to obtain an error signal as alleged in the Office Action.

Furthermore, Wang uses a sync and symbol clock recovery network 24 to control the data stream symbol sample by ADC 19. There is no subtraction of a feedback signal from an IF signal in Wang elements 22 and 24 as alleged in the Office Action. The suggestion for using Wang ADC 19 with the analog signal modulation and demodulation apparatuses of Levine appears to be based on impermissible hindsight of Applicant's disclosure in an attempt to reconstruct Applicant's claims in a piecemeal fashion. Such piecemeal reconstruction is

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improper and does not establish *prima facie* obviousness. (MPEP 2142). For these reasons, it is submitted that there is no proper motivation for the skilled artisan to modify Levine with the teachings of Wang as suggested in the Office Action. Consequently, the §103 rejections of record, which all rely on the combination of Levine and Wang, are improper for this reason alone.

(II) THE COMBINATION OF CITED REFERENCES DOES NOT TEACH OR SUGGEST ALL THE LIMITATIONS OF THE PENDING CLAIMS.

Applicant respectfully submits that even if it were proper to combine the teachings of Levine and Wang (*arguendo*), the resulting combination would still fail to teach or suggest the limitations of the pending claims. By way of example, claim 1 recites:

1. A portable communication device comprising:
an analog-to-digital converter to provide a digital output signal;
a signal generator coupled to the digital output signal to generate a feedback signal; and
wherein the portable communication device is adapted to subtract the feedback signal from an intermediate frequency (IF) signal.

Even when combining the Wang ADC 19, digital demodulator and carrier recovery circuit 22 and/or segment sync and symbol clock recovery network 24 with the analog circuit in Fig. 3 of Levine, there still would be no feedback signal subtracted from an IF signal as claimed by Applicant. (See, e.g., independent claims 1, 11, 19 and 25). Accordingly, Levine and Wang, taken alone or in any reasonable combination, fail to teach or suggest the limitations of the pending claims.

Since the remaining cited secondary references, Ko and/or Tolson, fail to make up the deficiencies of the combination of Levine and Wang noted above, and in fact the Office Action fails to provide any motivation or reason why the skilled artisan would combine these references with Levine and Wang, these rejections are also improper.

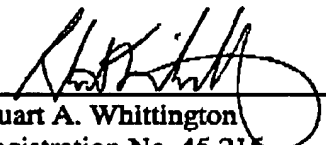
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For all the foregoing reasons, Applicant submits the §103 rejections of record are improper and respectfully requests reconsideration and withdrawal of these rejections.

CONCLUSION.

In view of the above, reconsideration and allowance of this application is now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below. Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee or deficiency thereof, except for the Issue Fee, is to be charged to **Deposit Account # 50-0221.**

Respectfully submitted,


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Reply to Office Action of April 8, 2004
ANNOTATED SHEET SHOWING CHANGES

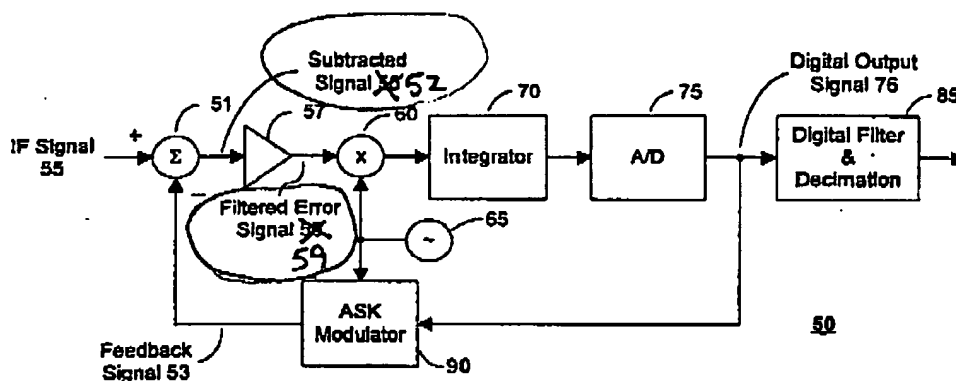


Fig. 2